Livestock Management

Livestock Management will help prepare students for further courses of study in animal science. The effective management of livestock requires an applicable knowledge of animal anatomy, nutrition, health genetics, facilities and the effects of livestock production on the environment. This course further prepares students to apply these principles.

Pre-requisites:	**Any fundamental course in the Animal Science Sub-cluster**
Recommended Credit:	**½ or 1**
Recommended Grade Level:	**10th, 11th, or 12th**

***** **½ denotes learning expectations that must be met when teaching the course for ½ credit.**

****** **All learning expectations must be met when teaching the course for 1 credit.**

Livestock Management

Standard 1.0

The student will evaluate safety techniques used in working with livestock by-products.

Standard 2.0

The student will differentiate between the internal and external parts of swine, beef, poultry and sheep.

Standard 3.0

The student will compare different facilities used in livestock operations.

Standard 4.0

The student will evaluate ways nutritional classes affect the health of livestock.

Standard 5.0

The student will evaluate genetic differences in animals and examine technology used to specify desirable traits.

Standard 6.0

The student will evaluate methods of disease and parasite control, prevention and treatment.

Standard 7.0

The student will integrate academic competencies with principles used in managing livestock.

Standard 8.0

The student will develop premier leadership and personal growth needed in the livestock industry.

Livestock Management

Course Description:
The course will prepare students for a career in Animal Science. Subject matter will include a basic knowledge of animal anatomy, nutrition, health, genetics, and animal facilities. Students will also evaluate the effect a livestock management program has on the local ecosystem.

Standard 1.0

The student will evaluate safety techniques used in working with livestock by-products.

Learning Expectations:
The student will:

1.1 Assess the national, state and local regulations regarding the livestock industry. ½
1.2 Evaluate ecological factors affecting livestock operations.
1.3 Rationalize variations in livestock operations nationwide.

Evidence Standard is Met:
The student will:

- Select standards and work habits used in everyday livestock management. ½
- Demonstrate livestock facility standards or guidelines that are accepted by national, state, and local agencies.
- Prepare a site evaluation for a proposed livestock facility.

Integration/Linkages
Language Arts, Ecology, Government, Biology, OSHA Standards, TOSHA Standards, SCANS (Secretary's Commission on Achieving Necessary Skills)

Sample Performance Tasks

- Research technical information that deals with environmental standards of the local area for livestock production.
- Design a pamphlet or multimedia presentation that describes the environmental standards applicable to the local area.

Standard 2.0

The student will differentiate between the internal and external parts of swine, beef, poultry and sheep.

Learning Expectations:
The student will:

2.1 Examine monogastric and polygastric digestive systems of livestock. ½
2.2 Examine muscle groups of livestock. ½
2.3 Examine skeletal groups of livestock.
2.4 Examine endocrine groups of livestock.
2.5 Examine nervous systems of livestock.

Evidence Standard is Met:
The student will:

- Contrast simple stomach with a ruminant stomach animal. ½
- Compare and identify different muscle groups for each species. ½
- Diagram the bone structure of an animal.
- Evaluate hormones produced by the male and female body.
- Distinguish the nervous system controls of the body.

Integration/Linkages
Biology, Physiology, Language Arts, Health Sciences, SCANS (Secretary's Commission on Achieving Necessary Skills)

Sample Performance Tasks

- Diagram the parts of monogastric and polygastric digestive systems of common livestock animals.
- Illustrate the purpose of different muscle groups of common livestock animals.

- Diagram where the muscle groups are in common livestock animals.
- Analyze the purpose of the bone structures in common livestock animals.
- Differentiate the hormones produced in animals and the purpose of the hormones.
- Assess the purpose of the various nervous system controls.
- Develop a presentation on how an animal's systems work together.

Standard 3.0

The student will compare different facilities used in livestock operations.

Learning Expectations:

The student will:

3.1 Evaluate facility designs to determine efficiency in livestock management.
3.2 Select technological applications necessary for proper livestock management.
3.3 Compare advantages and disadvantages of different facilities.
3.4 Evaluate regulations that affect raising livestock.

Evidence Standard is Met:

The student will:

- Illustrate the advantages and disadvantages of different livestock management facilities.
- Recommend applications that should be implemented in a livestock facility.
- Recommend different management facilities for handling animal wastes.
- Determine how EPA standards affect livestock waste management.

Integration/Linkages

Mathematics, Biology, Language Arts, Ecology, Drafting, Government, OSHA Standards, TOSHA Standards, EPA Regulations, SCANS (Secretary's Commission on Achieving Necessary Skills)

Sample Performance Standards

- Develop a presentation identifying advantages and disadvantages relating to livestock and waste management.
- Design a livestock management and waste system for a specific livestock operation.

Standard 4.0

The student will evaluate ways nutritional classes affect the health of livestock.

Learning Expectations:

The student will:

4.1	Assess nutrient classes and their functions.	½
4.2	Evaluate the energy cycle and how it affects animal health.	½
4.3	Formulate rations that aid in complete animal health.	½
4.4	Recommend feed stuffs for a particular livestock specie.	½

Evidence Standard is Met:

The student will:

- Evaluate the nutritional value of different feed stuffs. ½
- Determine the needs for the energy cycles of an animal during a year cycle. ½
- Select proper feed stuff to meet the nutritional requirements of different animals. ½
- Select and formulate rations for the needs of different animals. ½

Integration/Linkages

Mathematics, Biology, Chemistry, Geography, Language Arts, SCANS (Secretary's Commission on Achieving Necessary Skills)

Sample Performance Tasks

- Formulate rations according to nutritional charts.
- Select feed stuffs according to geographic area and nutritional value.

Standard 5.0

The student will evaluate genetic differences in animals and examine technology used to specify desirable traits.

Learning Expectations:

The student will:

5.1 Evaluate the process of genetic inheritance in livestock reproduction.
5.2 Evaluate genetic similarities and differences in breeding animals.
5.3 Generalize the genetic processes of different animals.
5.4 Critique new trends in genetic engineering.

Evidence Standard is Met:

The student will:

- Outline the process of reproduction and genetic manipulation.
- Analyze the use of Punnett Squares in determining genetics and trait inheritance.
- Create a genetic flow chart of different animals.
- Debate the role of genetic engineering in livestock production.

Integration/Linkages

Mathematics, Biology, Language Arts, Health Sciences, SCANS (Secretary's Commission on Achieving Necessary Skills)

Sample Performance Tasks

- Diagram a Punnett Square to show combinations of various traits
- Develop a genetic flow chart of animal reproduction.
- Develop a presentation describing genetic manipulation in animals.
- Develop a pamphlet of modern breeding techniques to be used in community education.

Standard 6.0

The student will evaluate methods of disease and parasite control, prevention and treatment.

Learning Expectations:

The student will:

6.1 Categorize symptoms of diseases to species affected. ½
6.2 Compare common drugs used to treat diseases.
6.3 Interpret appropriate drug use from the label.

Evidence Standard is Met:

The student will:

- Assemble sources of reference materials on diseases and their effects on different livestock species. ½
- Compare different parasitic control methods for various livestock species.
- Select drugs for specific animal needs.

Integration Linkages

Mathematics, Biology, Chemistry, Language Arts, Health Sciences, SCANS (Secretary's Commission on Achieving Necessary Skills)

Sample Performance Tasks

- Interpret symptoms of various diseases in common livestock animals.
- Calculate drug dosages for the appropriate treatment of a disease or pest.
- Develop a yearly health maintenance plan for a livestock animal.

Standard 7.0

The student will integrate academic competencies with principles used in managing livestock.

Language Arts:

The student will:

7.1 Construct and use spreadsheets and databases to keep records on livestock maintenance.
7.2 Use appropriate grammar in completing livestock forms and applications.

7.3 Present current livestock topics for discussion. ½

7.4 Gather research from a variety of sources on livestock management techniques. ½

Mathematics:

The student will:

7.5 Use S.I. and metric units of measurement to determine needed feed stuffs. ½

7.6 Use ratios to determine the amount of feed needed to meet the nutritional requirements of animals. ½

7.7 Read, interpret and construct graphs to compare weight gain to feed intake. ½

Science:

The student will:

7.8 Analyze an animal's gross anatomy. ½

7.9 Diagram an animal's physiology.

7.10 Evaluate the importance of an animal's nutrition to growth and health.

7.11 Perform diagnosis of livestock diseases and pest infestation, using the scientific method.

7.12 Use nomenclature classification to group livestock, diseases and pests. ½

Evidence Standard is Met:

The student will:

- Compare methods of treatment for animal health problems.
- Design a facility to provide housing for different animals.
- Determine feed needs to maintain a healthy animal during its life cycle. ½
- Illustrate the various systems found in an animal.

Integration/Linkages

Language Arts, Mathematics, Biology, Chemistry, Health Sciences, SCANS (Secretary's Commission on Achieving Necessary Skills)

Sample Performance Tasks

- Differentiate between methods for treating disease.
- Classify systems of an animal based on purpose and use.
- Recommend an animal facility based on use and livestock needs.
- Recommend daily feed rations based on feed efficiency and availability.

Standard 8.0

The student will develop premier leadership and personal growth needed in the livestock industry.

Learning Expectations:

The student will:

8.1 Demonstrate skills associated with individuals in leadership positions in a livestock related industry. ½

8.2 Demonstrate public speaking skills to inform audiences about livestock concerns. ½

8.3 Conduct a meeting using appropriate parliamentary procedure abilities.

8.4 Develop and implement a program of activities for the local FFA chapter.

8.5 Demonstrate the use of modern communication equipment to inform the public about livestock concerns.

Evidence Standard is Met:

The student will:

- Interpret the rules regarding FFA public speaking CDEs, career development events. ½
- Using Robert's Rules of Order, employ appropriate parliamentary procedure abilities in a mock meeting.
- Illustrate a mock SAEP, supervised agricultural experience program, related to livestock management.
- Develop a program of activities that includes livestock events.

Integration/Linkages

Language Arts, National FFA Prepared Speaking CDE Guidelines, National FFA Extemporaneous Speaking Guidelines, National FFA Parliamentary Procedure Guidelines, National FFA Guidelines for Proficiency Awards and Degrees, SCANS (Secretary's Commission on Achieving Necessary Skills), National FFA Guidelines for Community Education Programs

Sample Performance Tasks

- Prepare a four-to-six-minute prepared or extemporaneous speech on a livestock topic.
- Demonstrate a mock meeting using FFA parliamentary procedure abilities.
- Prepare a FFA proficiency award based on a mock livestock SAEP.
- Prepare a schedule of school and community livestock activities for chapter officers and members.
- Participate in the FFA Food for America program.
- Participate in the FFA Farm Safety Just 4 Kids program.
- Participate in the America Reads Challenge program.
- Participate in the FFA Partners for a Safer Community program
- Participate in the FFA PALS program.